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SURVEY POPULATION RESPONSE TO AIRPLANE NOISE

C. Bitter and K. W. Schwager

FOR REFERENCE

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Translation of "Enquete Reacties Bevolking op Vliegtuiglawaai",
Instituut Voor Gezondheidstechniek ~~INC~~^{INC}, Leiden, Netherlands, Work Report
D-19, August 1964; Six parts and questionnaire (Various pagings) 69 pages

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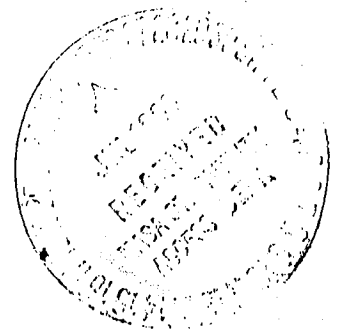
C. Bitter and K. W. Schwager

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LIST OF ABBREVIATIONS USED IN THE TRANSLATION FROM ORIGINAL

agric., agricult.	agricultural
etc.	et cetera
DCA	Department of Civil Aviation
T.V.	television
NA	not annoying
A	annoying
VA	very annoying
ind.	individual
O	often
S	sometimes
an.	annoyance
cples.	couples
w/	with
w/o	without
chldn.	children
r	rental
o	owned
Y	yes
N	no

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Psychological Group
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Wassenaarseweg 56, Leiden

SURVEY POPULATION RESPONSE TO AIRPLANE NOISE

REPORT PART 1

Research Intention

Some provisional results

by

Drs. C. Bitter

K. W. Schwager

TABLE OF CONTENTS

	<u>Page</u>
1. ANNOYANCE FROM AIRPLANES WITH THE FRAMEWORK OF LIVING CIRCUMSTANCES	1
2. PERCEPTION OF TAKE-OFF, LANDING, FLYING OVER, AND LONG TESTING	2
3. FEAR OF AIRPLANES AND SHAKING OF THE HOUSE BY AIRPLANES	4
a. Fear of airplanes	4
b. Shaking , of the house by airplanes	4

TABLES

TABLE I

Distribution of housing types per area (see page 6)

area \ category	single house	one of two under one roof	row house, middle	row house, corner	house down-stairs in a row	house upstairs in a row; duplex	apartment with porch	gallery apartment	subtotal apartments	company house	unknown	total = 100%
AALSMEER I	60.6	28.0	6.7	3.3	-	-	0.7	-	0.7	0.7	-	150
AALSMEER II	12.7	14.0	38.6	24.7	2.0	6.0	-	-	-	1.3	0.7	150
BADHOEVE-DORP I	0.7	6.1	29.7	11.5	2.7	31.7	17.6	-	17.6	-	-	148
BADHOEVE-DORP II	4.2	17.2	20.0	9.6	7.6	2.1	39.3	-	39.3	-	-	145
OSDORP	-	-	-	-	1.3	0.7	94.6	2.7	97.3	0.7	-	150
GEUZEVELD	-	-	14.0	4.7	8.0	-	48.0	25.3	73.3	-	-	150
AMSTELVEEN I	16.4	14.3	40.8	14.3	2.0	2.0	2.0	8.2	10.2	-	-	49
AMSTELVEEN II	4.0	2.0	40.0	6.0	6.0	2.0	18.0	22.0	40.0	-	-	50
TOTAL	12.8	10.6	20.4	9.1	3.6	6.3	31.0	5.7	36.7	0.4	0.1	992

TABLE II

Composition of the population per area as to profession (see page 6)												
area	category	agricult.	free profes-	higher non-	lower non-agri-	higher	lower employees	skilled non-	non-skilled	no profession,	total = 100%	
		managers, partners	sions, scienti- fic, etc.	agricultural managers	cultural mana- gers	employees	employees	agric. laborers	non-agricultu- ral laborers	unknown		
AALSMEER I		45.3	11.3	0.7	4.7	14.7	0.7	11.3	4.7	5.3	1.3	150
AALSMEER II		5.3	6.0	0.7	2.0	11.3	6.0	34.0	12.0	18.7	4.0	150
BADHOEVE- DORP I		-	1.4	-	4.0	10.1	24.3	39.2	16.2	3.4	1.4	148
BADHOEVE- DORP II		0.7	0.7	-	4.8	16.5	28.3	31.0	9.7	5.5	2.8	145
OSDORP		0.7	-	2.0	-	2.7	4.7	43.3	23.3	20.0	3.3	150
GEUZEVELD		-	-	2.7	1.3	6.0	10.7	48.0	19.3	10.0	2.0	150
AMSTELVEEN I		2.0	-	-	12.3	8.2	24.5	22.4	14.3	10.2	6.1	49
AMSTELVEEN II		-	-	4.0	6.0	8.0	24.0	54.0	4.0	-	-	50

TABLE III

Which noise would you prefer to get rid of? (see page 14)

area \ category	airplanes			traffic		neighbors		noise from industry, shops	other noises	undecided	no noise	no answer	total = 100%
	airplane noise in general	jet fighters (howling)	sound barrier	mopeds (yobs)	other traffic	noise from neighbors	children playing outside						
AALSMEER I	65.3	10.7	3.3	4.7	6.0	-	-	3.3	-	2.7	1.3	2.7	150
AALSMEER II	45.3	4.0	2.0	7.3	4.7	0.7	8.6	2.7	0.7	15.3	4.7	4.0	150
BADHOEVE-DORP I	65.6	14.2	0.7	0.7	0.7	1.3	7.4	0.7	-	1.3	6.7	0.7	148
BADHOEVE-DORP II	60.7	20.7	2.1	3.4	-	-	4.1	-	-	2.1	6.9	-	145
OSDORP	17.4	1.3	2.7	10.0	1.3	2.0	19.3	2.7	1.3	25.4	7.3	9.3	150
GEUZEVELD	17.3	1.3	0.7	12.0	2.0	7.3	32.0	0.7	0.7	14.7	9.3	2.0	150
AMSTELVEEN I	20.4	2.0	8.2	2.0	12.2	4.1	12.3	-	4.1	8.2	16.3	10.2	49
AMSTELVEEN II	4.0	4.0	28.0	4.0	6.0	4.0	22.0	4.0	4.0	6.0	14.0	-	50
TOTAL	41.9	8.1	3.5	6.0	3.1	2.1	12.5	1.7	0.8	10.0	7.0	3.3	992

TABLE IV

Frequency of the perception of breaking the sound barrier and the amount of annoyance (see page 15)

area \ category	often			sometimes			rarely	never	no response	total = 100%
	high annoyance	annoyance	no annoyance	high annoyance	annoyance	no annoyance				
AALSMEER I	38.0	38.6	6.0	1.3	8.7	6.7	0.7	-	-	150
AALSMEER II	38.6	28.0	9.3	4.7	10.7	8.0	0.7	-	-	150
BADHOEVE-DORP I	43.9	29.0	16.9	2.0	5.4	1.4	0.7	0.7	-	148
BADHOEVE-DORP II	65.4	15.9	11.7	-	2.1	3.5	0.7	0.7	-	145
OSDORP	21.3	20.7	10.0	10.7	20.6	10.7	2.0	3.3	0.7	150
GEUZEVELD	56.0	14.7	8.7	3.3	6.0	8.0	2.0	1.3	-	150
AMSTELVEEN I	18.4	30.6	6.1	10.2	20.4	10.2	4.1	-	-	49
AMSTELVEEN II	32.0	16.0	2.0	16.0	14.0	8.0	10.0	2.0	-	50
TOTAL	41.9	24.4	9.8	4.6	9.8	6.7	1.7	1.0	0.1	992

TABLE V

Percentage of respondents who mention airplane noise as an unpleasant factor, calculated as the number of respondents per area that are undecided in their attitude toward Schiphol					
Area	a Total per area	% b of a	b Total undecided	c noise mentioned	% c of b
AALSMEER I	150	6.0	9	7	77.7
AALSMEER II	150	36.6	55	22	40.0
BADHOEVEDORP I	148	6.7	10	6	60.0
BADHOEVEDORP II	145	10.3	15	11	73.2
OSDORP	150	28.6	43	8	18.6
GEUZEVELD	150	14.6	22	7	31.8
AMSTELVEEN I	49	2.2	1	0	0.0
AMSTELVEEN II	50	0.0	0	0	-
TOTAL	992	15.6	155	61	39.4

SURVEY POPULATION RESPONSE TO AIRPLANE NOISE
REPORT PART 2

by

Drs. C. Bitter
K. W. Schwager

TABLE OF CONTENTS

	<u>Page</u>
1. ADVANTAGES AND DISADVANTAGES OF THE PRESENCE OF SCHIPHOL AND THE AIRPLANES	1
2. PERCEPTION OF THE NUMBER OF AIRPLANES FLYING OVER	3
3. ANNOYANCE RATINGS	5
3.1 Introduction to scales and ratings	5
3.2 The Guttman scale	5
3.3 Characteristics of the Guttman scale	7
3.4 The developed scales and annoyance rating	7
3.4.1 Introduction	7
3.4.2 The problem of non-response	8
3.4.3 Applicability of the items: the activi- ties pattern	8
3.4.4 The standard activities pattern	9
3.4.5 The developed Guttman scales	10
3.5 The annoyance ratings	11
4. THE COMPARABILITY WITH THE BRITISH AND AMERI- CAN RESEARCH	13

Appendix A.

TABLES

SURVEY POPULATION RESPONSE TO AIRPLANE NOISE
REPORT PART 3

by

Drs. C. Bitter
K. W. Schwager

TABLE I

First of all, can you tell why you like the presence of Schiphol and the airplanes? (C1) Can you also tell why you don't like it? (C2) (in % of total per area)							
area	opinion in %	clearly positive	clearly negative	neutral	undecided	fairly negative no answer rest	total number of respondents
AALSMEER I	60.0	22.0	10.6	6.0	1.4	150	
AALSMEER II	34.6	10.0	15.3	36.6	3.5	150	
BADHOEVEDORP I	51.2	24.9	10.8	6.7	6.4	148	
BADHOEVEDORP II	49.0	19.3	16.5	10.3	4.9	145	
OSDORP	26.6	18.6	19.3	28.6	4.9	150	
GEUZEVELD	30.6	19.3	34.0	14.6	1.5	150	
AMSTELVEEN I	34.7	20.4	38.8	2.2	3.9	49	
AMSTELVEEN II	46.0	12.0	40.0	0.0	2.0	50	
TOTAL	41.8	18.7	20.0	15.6	3.9	992	

TABLE II.

Percentage of respondents that mention airplane noise as an unpleasant factor, calculated as the number of respondents per area, that is <u>clearly positive</u> in their attitude toward Schiphol					
Area	a total per area	% b of a	b total <u>positive</u>	c noise mentioned	% c of b
AALSMEER I	150	60.0	90	75	83.3
AALSMEER II	150	34.6	52	33	63.5
BADHOEVEDORP I	148	51.2	76	37	48.7
BADHOEVEDORP II	145	49.0	71	38	53.5
OSDORP	150	26.6	40	6	15.0
GEUZEVELD	150	30.6	46	14	30.4
AMSTELVEEN I	49	34.7	17	4	23.5
AMSTELVEEN II	50	46.0	23	4	17.4
TOTAL	992	41.8	415	211	50.6

TABLE VII

How many airplanes flew over the day before yesterday? (E7, b)

<div>number of planes</div> <div>area</div>	0	1-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	> 40	answered	undecided, no answer	not at home	total
AALSMEER I	3	4	8	6	3	4	3	-	1	2	34	91	25	150
AALSMEER II	-	3	8	2	-	1	-	-	-	-	14	101	35	150
BADHOEVEDORP I	-	3	5	3	4	2	1	1	1	-	20	94	34	148
BADHOEVEDORP II	-	4	9	4	6	3	1	-	-	4	31	75	39	145
OSDORP	1	1	3	3	1	2	2	-	-	2	15	93	42	150
GEUZEVELD	-	2	7	3	3	-	-	-	1	3	19	71	60	150
AMSTELVEEN I	-	-	-	-	-	-	-	-	-	-	0	34	15	49
AMSTELVEEN II	2	2	-	-	-	-	-	-	-	-	4	31	15	50
TOTAL	6	19	40	21	17	12	7	1	3	11	137	590	265	992

Aalsmeer I and II

TABLE VIII

By respondents, number of airplanes that flew over yesterday, as compared with the number stated by the Department of Civil Aviation			
respon- dents DCA	0-10	11-30	> 30
0-10	6	4	0
11-30	25	14	2
> 30	7	3	2

N = 63

Badhoevedorp I and II
Osdorp and Geuzeveld

respon- dents DCA	0-10	11-30	> 30
0-10	6	0	1
11-30	8	6	2
> 30	49	54	10

N = 136

TABLE IX

Aalsmeer I and II

By respondents, stated number of air-planes that flew over the day before yesterday, as compared with the number stated by the Department of Civil Aviation.

<div>respon- dents</div> <div>DCA</div>	0-10	11-30	> 30
0-10	3	2	1
11-30	19	14	2
> 30	4	3	0

N = 48

Badhoevedorp I and II
Osdorp and Geuzeveld

<div>respon- dents</div> <div>DCA</div>	0-10	11-30	> 30
0-10	1	2	0
11-30	3	3	1
> 30	31	33	11

N = 85

TABLE X (see page 8)

Frequency distribution of annoyance ratings for 5 items (T.V., radio, conversation, activities, sleeping and resting), in which often and sometimes = 1; rarely, never, undecided, no response and not applicable = 0, per area split up into respondents who did (R), and respondents who did not (N) answer question 18a (does the house shake because of airplane noise?)

area \ ratings		0	1	2	3	4	5	total number of respondents	average annoyance rating
AALSMEER I	R	10	31	45	20	7	1	114	1.88
	N	5	7	12	9	3	0	36	1.94
AALSMEER II	R	9	34	41	19	11	4	118	2.00
	N	4	11	8	3	6	0	32	1.88
BADHOEVE-DORP I	R	1	17	37	43	22	10	130	2.76
	N	0	4	6	6	2	0	18	2.34
BADHOEVE-DORP II	R	4	21	30	43	16	8	122	2.57
	N	1	5	7	7	1	2	23	2.35
OSDORP	R	34	46	22	13	6	0	121	1.26
	N	8	11	6	4	0	0	29	1.21
GEUZEVELD	R	37	32	23	13	7	2	114	1.36
	N	10	12	8	4	2	0	36	1.34
AMSTELVEEN I	R	12	19	9	4	1	0	45	1.18
	N	2	1	1	0	0	0	4	0.75
AMSTELVEEN II	R	19	11	8	4	0	0	42	0.93
	N	2	1	3	1	1	0	8	1.75
TOTAL	R	126	211	215	159	70	25	806	1.89
	N	32	52	51	34	15	2	186	1.75

TABLE XI

Standard rating for 80 percent radio listeners, 76 percent TV watchers, and a response of 100 percent to question C18, for two choices: I. often and sometimes = 1, rarely and never = 0 II. often = 1, sometimes, rarely and never = 0 for areas and complete mat'l		
area	rating II	rating I
AALSMEER I	3.55	2.14
AALSMEER II	3.63	2.28
BADHOEVEDORP I	4.29	3.14
BADHOEVEDORP II	4.16	3.18
OSDORP	2.52	1.52
GEUZEVELD	2.81	1.98
AMSTELVEEN I	2.24	1.13
AMSTELVEEN II	2.02	1.06
TOTAL	3.34	2.24

TABLE XII (see pages 11 and 12)

Frequency distribution of annoyance ratings for 5 items (TV, radio, conversation, activities, sleeping and resting), in which often and sometimes = 1, rarely, never, undecided, no response and not applicable = 0. (rating I)

area \ rating	0	1	2	3	4	5	total number of respondents	average annoyance rating
AALSMEER I	15	38	57	29	10	1	150	1.89
AALSMEER II	13	45	49	22	17	4	150	1.98
BADHOEVEDORP I	1	21	43	49	24	10	148	2.70
BADHOEVEDORP II	5	26	37	50	17	10	145	2.54
OSDORP	42	57	28	17	6	0	150	1.25
GEUZEVELD	47	44	31	17	9	2	150	1.35
AMSTELVEEN I	14	20	10	4	1	0	49	1.14
AMSTELVEEN II	21	12	11	5	1	0	50	1.06
TOTAL	158	263	266	193	85	27	992	1.86

TABLE XIII

Frequency distribution of annoyance ratings for 7 items (TV, radio, conversation, activities, sleeping and resting, trembling of the house, fright), in which often and sometimes = 1, rarely, never, undecided, no response and not applicable = 0. (rating I)

area \ rating	0	1	2	3	4	5	6	7	total number of respondents	average annoyance rating
AALSMEER I	3	20	23	31	49	18	5	1	150	3.21
AALSMEER II	5	8	36	35	33	18	11	4	150	3.41
BADHOEVEDORP I	0	5	15	27	44	34	18	5	118	4.09
BADHOEVEDORP II	1	6	23	27	33	33	16	7	145	3.97
OSDORP	17	32	35	38	18	7	3	0	150	2.27
GEUZEVELD	20	25	32	30	22	15	4	2	150	2.53
AMSTELVEEN I	7	13	10	9	7	2	1	0	49	2.12
AMSTELVEEN II	9	11	15	8	5	2	0	0	50	1.90
TOTAL	62	120	189	205	211	129	58	18	992	3.10

TABLE XIV (see page 12)

Frequency distribution of annoyance ratings for 7 items (TV, radio, conversation, activities, sleeping and resting, trembling of the house, fright), in which often = 1, sometimes, rarely, never, undecided, and not applicable = 0 (rating II)

area \ rating	0	1	2	3	4	5	6	7	total number of respondents	average annoyance rating
AALSMEER I	17	38	52	27	15	1	0	0	150	1.92
AALSMEER II	11	45	43	35	9	6	0	1	150	2.06
BADHOEVEDORP I	3	23	33	31	36	15	7	0	148	3.00
BADHOEVEDORP II	3	23	32	36	27	15	8	1	145	3.00
OSDORP	33	54	44	13	6	0	0	0	150	1.37
GEUZEVELD	25	44	46	19	11	3	2	0	150	1.76
AMSTELVEEN I	16	17	13	2	1	0	0	0	49	1.08
AMSTELVEEN II	14	25	10	1	0	0	0	0	50	0.96
TOTAL	122	269	273	164	105	40	17	2	992	2.06

SURVEY POPULATION RESPONSE TO AIRPLANE NOISE
REPORT PART 4

by

Drs. C. Bitter
W. K. Schwager

TABLE OF CONTENTS

	<u>Page</u>
1. THE DEGREE OF ANNOYANCE EXPERIENCED FROM AIR- PLANE NOISES IN CONNECTION WITH THE FREQUEN- CY OF PERCEPTION OF THE NOISES (THE SUBJECTIVE ESTIMATION OF THE ANNOYANCE)	1
2. THE CORRELATION BETWEEN THE DEGREE OF ANNOY- ANCE FROM AIRPLANE NOISES AND THE DISTURBANCE OF ACTIVITIES BY AIRPLANE NOISE (THE ANNOYANCE RATING)	3
3. THE GEOGRAPHIC SPREAD OF THE DEGREE OF ANNOY- ANCE FROM AIRPLANE NOISE AND OF THE ANNOYANCE RATINGS IN THE AREAS BADHOEVEDORP I AND II	7
4. THE CORRELATION BETWEEN THE ANSWERS TO THE QUESTIONS B11: "WHICH NOISE DID YOU PREFER TO GET RID OF?" AND G2: "WHICH NOISE DO YOU EX- PERIENCE AS MOST ANNOYING IN YOUR SITUATION?"	8
5. THE VALIDITY OF THE DEVELOPED SCALES AND CURVES FOR THE DISTURBANCE OF ACTIVITIES BY AIRPLANE NOISE	10

TABLES
FIGURES
MAPS

Coding of the Combination - Code:
 annoyance from airplane noise.
 Column 49 Map type 2.

Columns 31 thru 37, 39 and 40
 in one of these columns:

Combination - Code
 Column 49

Code 0	1
" 1, but nowhere code 3	2
" 2, also somewhere code 3	3
" 3	4
" 2, but nowhere code 4	5
" 2, also somewhere code 4	6
" 4	7
" 5	8
Remaining codes	9

Meaning of the Combination - Code

Code qualifications

	degree of annoyance	frequency of perception
1	very annoying	often experienced
2	very annoying	sometimes experienced
3	very annoying	sometimes experienced
	annoying	often experienced
4	annoying	often experienced
5	very annoying	rarely experienced
6	very annoying	rarely experienced
	annoying	sometimes experienced
7	annoying	sometimes experienced
8	annoying	rarely experienced
9	not annoying	often experienced
	not annoying	sometimes experienced
	not annoying	rarely experienced
	not qualified	
	not mentioned	

TABLE II

Frequency distribution of the Combination - Codes for the different areas, for the subtotals and for the complete material

area	annoyance from airplanes (in absolute figures)(combination - code of columns 31 thru 37, 39 and 40)									Total
	1	2	3	4	5	6	7	8	9	
AMSTELVEEN I	5	2		5			10	4	23	49
AMSTELVEEN II	12	8		5			11		14	50
A'VEEN I + II	17	10		10			21	4	37	99
AALSMEER I	46	11		44			30		19	150
AALSMEER II	53	6		36			18		37	150
BADHOEVEDORP I	89	1		28			5		25	148
BADHOEVEDORP II	80	4		26			9		26	145
OSDORP	32	10		32			14	1	61	150
GEUZEVELD	57	8	4	22			11		48	150
TOTAL	357	40	4	188			87		216	893
GRAND TOTAL	374	50	4	198			108	5	253	992

TABLE III

Proportional frequency distributions of the Combination - Codes for the different areas, for the subtotals and for the complete material.

area	annoyance from airplanes (in percentages) (combination - code of columns 31 thru 37, 39 and 40)									Total
	1	2	3	4	5	6	7	8	9	
AMSTELVEEN I	10.2	4.1		10.2			20.4	8.1	47	49
AMSTELVEEN II	24	16		10			22		28	50
A'VEEN I + II	17.2	10.1		10.1			21.2	4.0	37.4	99
AALSMEER I	30.6	7.3		29.4			20.0		12.7	150
AALSMEER II	35.4	4.0		24.0			12.0		24.6	150
BADHOEVEDORP I	60	0.6		18.9			3.4		17.1	148
BADHOEVEDORP II	55.1	2.7		18.0			6.2		18.0	145
OSDORP	21.4	6.7		21.4			9.3	0.6	40.6	150
GEUZEVELD	38	5.3	2.7	14.7			7.3		32.0	150
TOTAL	40.0	4.5	0.4	21.0			9.7	0.1	24.2	893
GRAND TOTAL	37.8	5.0	0.4	20.0			10.9	0.5	25.4	992

TABLE IV

Correlation between the degree of annoyance from airplane noise and the annoyance ratings						
degree of annoyance annoyance rating	very annoying often	very annoying sometimes	annoying often	annoying sometimes	not annoying	Total
0	1	-	-	-	2	3
1	2	-	6	7	5	20
2	7	3	6	5	2	23
3	5	2	12	8	4	31
4	19	3	14	7	6	49
5	8	3	4	3	-	18
6	3	-	2	-	-	5
7	1	-	-	-	-	1
Total	46	11	44	30	19	150

TABLE X

Number of respondents that give airplane noise as an answer to question (B6): "If you could change one thing in your neighborhood, which item would you choose?"			
area	number of respondents that mention airplane noise	total per area	% of total
AALSMEER I	11	150	7.3
AALSMEER II	4	150	2.7
BADHOEVEDORP I	23	148	15.5
BADHOEVEDORP II	31	145	21.4
OSDORP	2	150	1.3
GEUZEVELD	2	150	1.3
AMSTELVEEN I	1	49	2.0
AMSTELVEEN II	0	50	0.0
TOTAL	74	992	7.5

TABLE XI

Which noise is most annoying to you in your situation? (in percentages)

category area	airplane noises	traffic noises	noises from neighbors	other noises + undecided	Total = 100%
AALSMEER I	79.2	15.3	1.5	4.0	150
AALSMEER II	62.0	10.0	9.3	18.7	150
BADHOEVEDORP I	71.0	1.4	16.8	10.8	148
BADHOEVEDORP II	68.2	3.4	13.1	15.3	145
OSDORP	28.0	8.0	28.0	36.0	150
GEUZEVELD	28.6	15.3	35.3	20.8	150
AMSTELVEEN I	38.7	20.4	18.4	22.5	49
AMSTELVEEN II	22.0	12.0	22.0	44.0	50
TOTAL	53.5	9.6	17.6	19.3	992

TABLE XII

Aalsmeer I

Correlation between answers to question B 11:
"Which noise did you prefer to get rid of?" and
question G 2: "Which noise is most annoying to you
in your situation?"

G 2 B 11	airplane noises	traffic noises	noises from neighbors	other noises & undecided	Total
airplane noises	106	10	1	2	119
traffic noises	4	11	-	1	16
noises from neighbors	-	-	-	-	0
other noises & undecided	9	2	1	3	15
Total	119	23	2	6	150

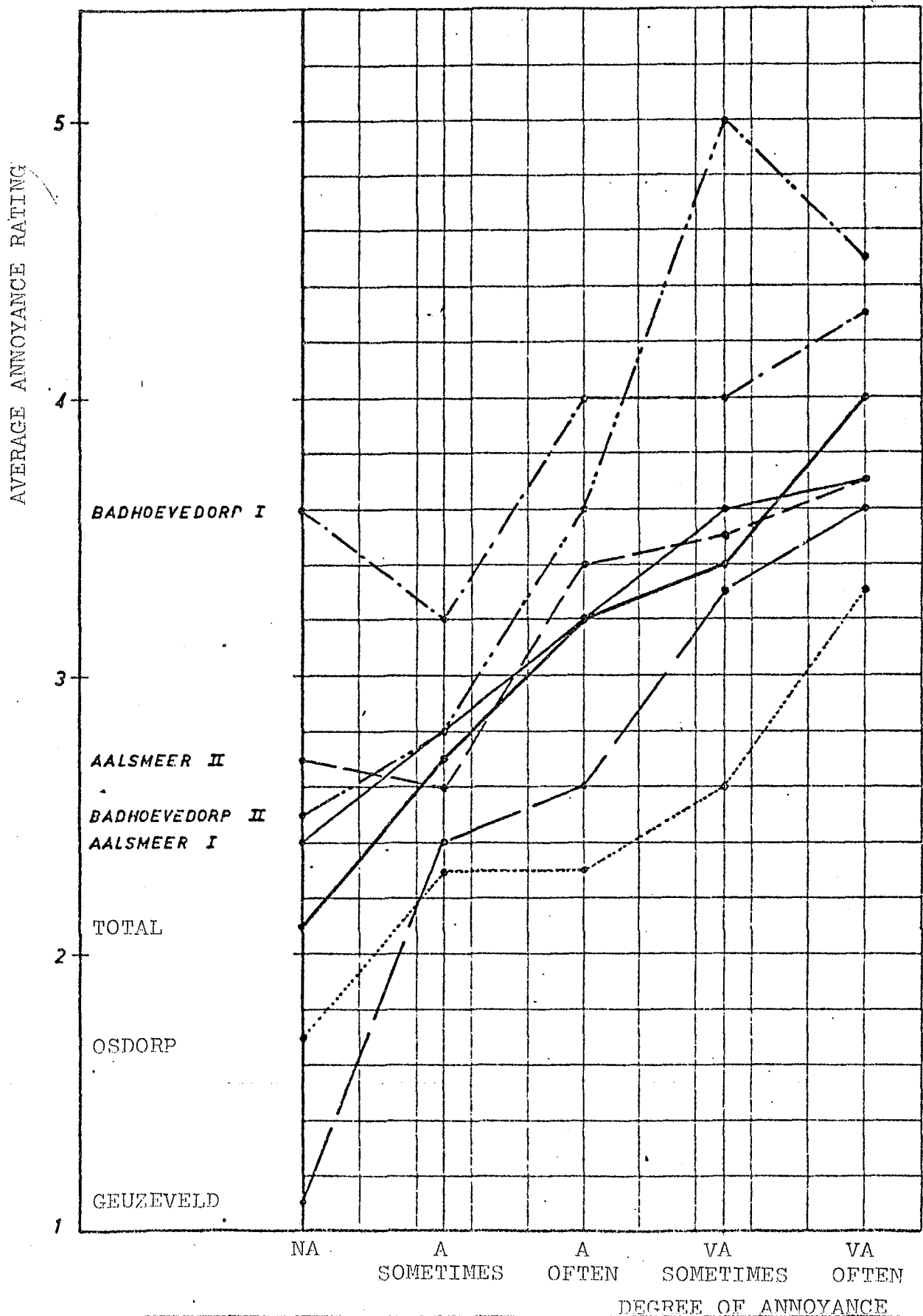
TABLE XII

Aalsmeer II

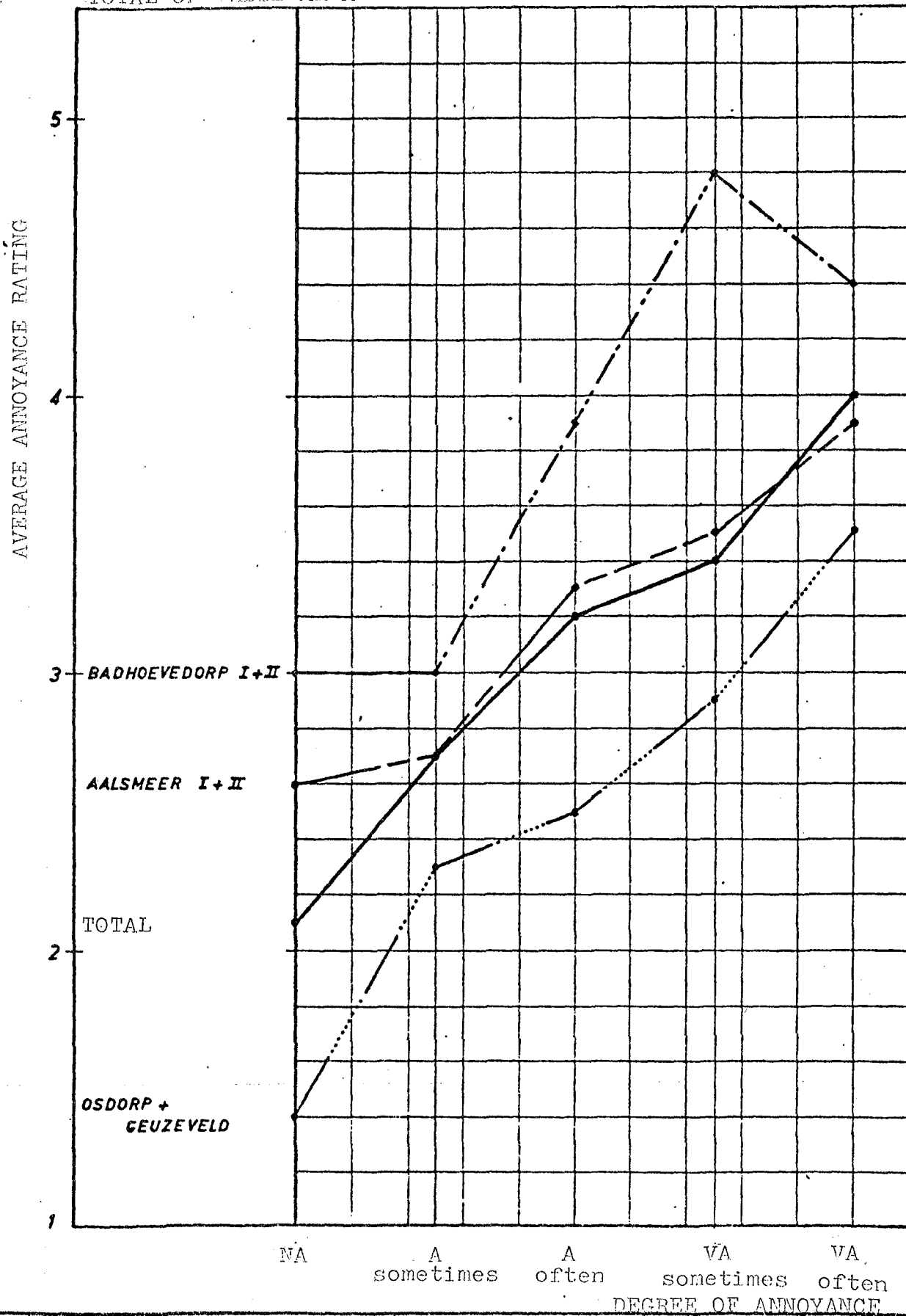
Correlation between answers to question B 11:
"Which noise did you prefer to get rid of?" and
question G 2: "Which noise is most annoying to you
in your situation?"

G 2 B 11	airplane noises	traffic noises	noises from neighbors	other noises & undecided	Total
airplane noises	62	3	4	8	77
traffic noises	8	8	-	2	18
noises from neighbors	2	1	9	2	14
other noises & undecided	21	3	1	16	41
Total	93	15	14	28	150

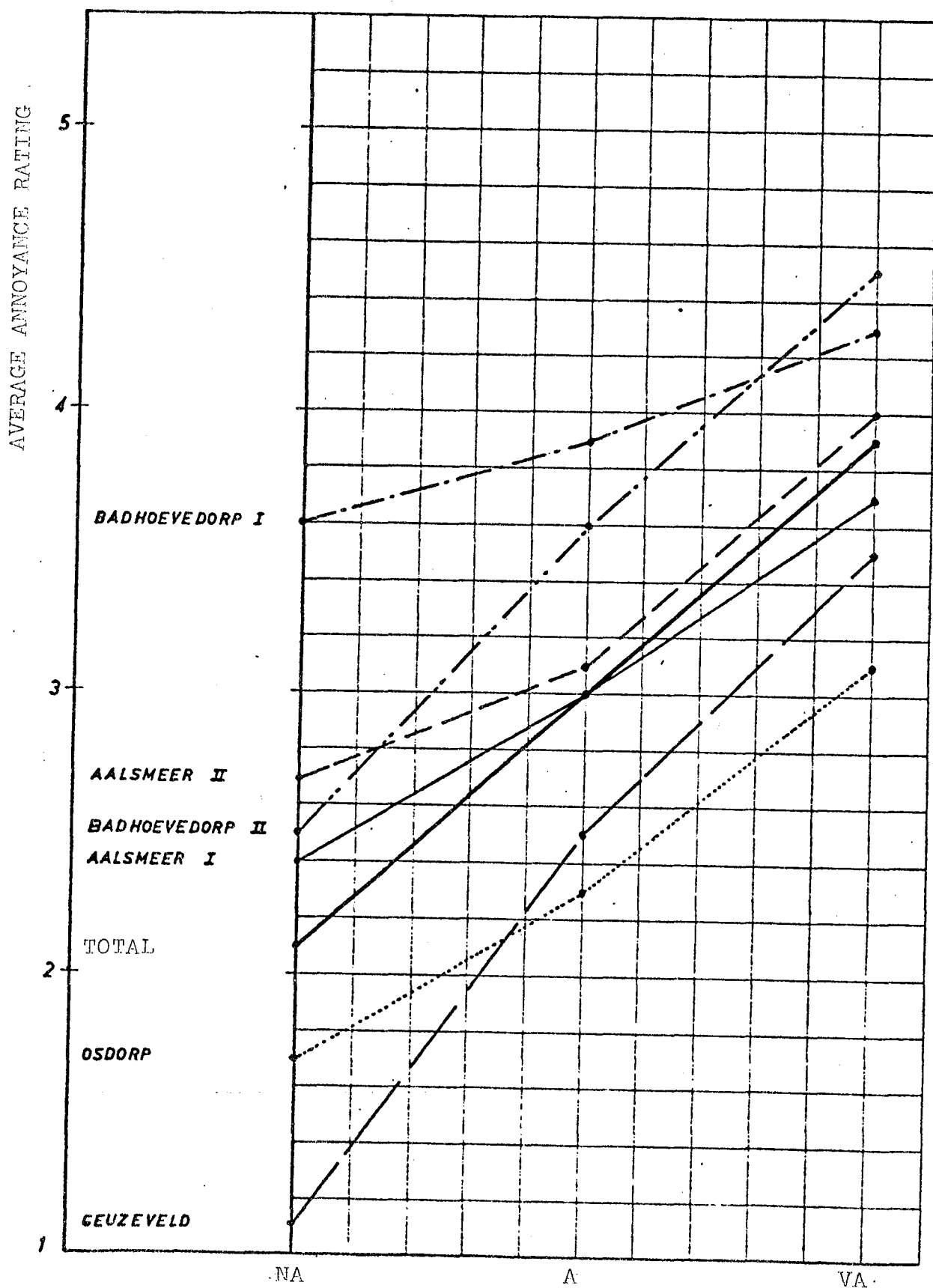
NOISE (NOT ANNOYING, SOMETIMES ANNOYING, OFTEN ANNOYING, SOMETIMES VERY ANNOYING, OFTEN VERY ANNOYING), AND AVERAGE ANNOYANCE RATING 1, FOR DIFFERENT AREAS AND FOR THE TOTAL OF THESE AREAS



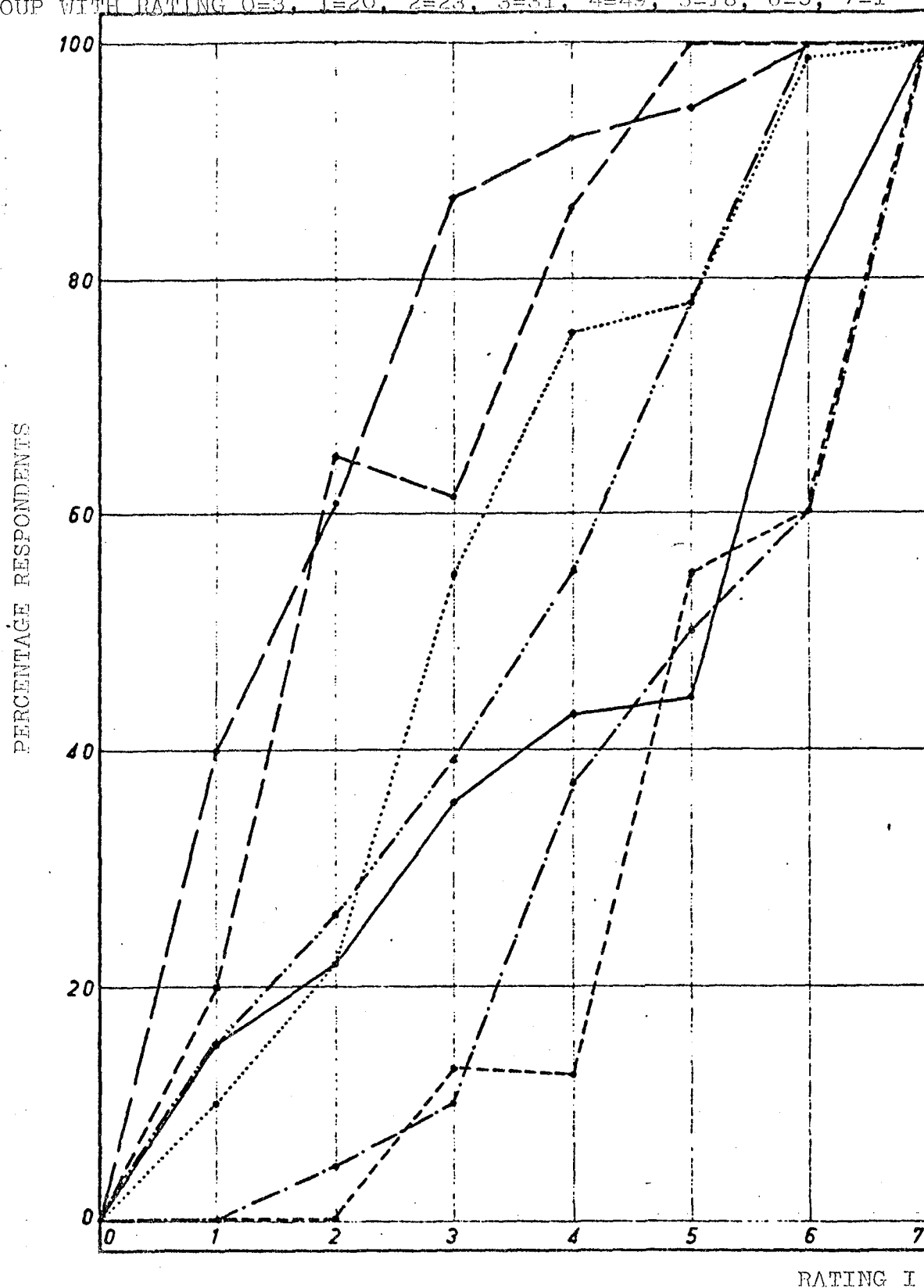
NOISE (NOT ANNOYING, SOMETIMES ANNOYING, OFTEN ANNOYING, SOMETIMES VERY ANNOYING, OFTEN VERY ANNOYING, AND AVERAGE ANNOYANCE RATING 1), FOR DIFFERENT AREAS (COMBINED) AND FOR THE TOTAL OF THESE AREAS



NOISE (NOT ANNOYING, ANNOYING, VERY ANNOYING) AND AVERAGE ANNOYANCE RATING I, FOR DIFFERENT AREAS AND FOR THE TOTAL OF THESE AREAS

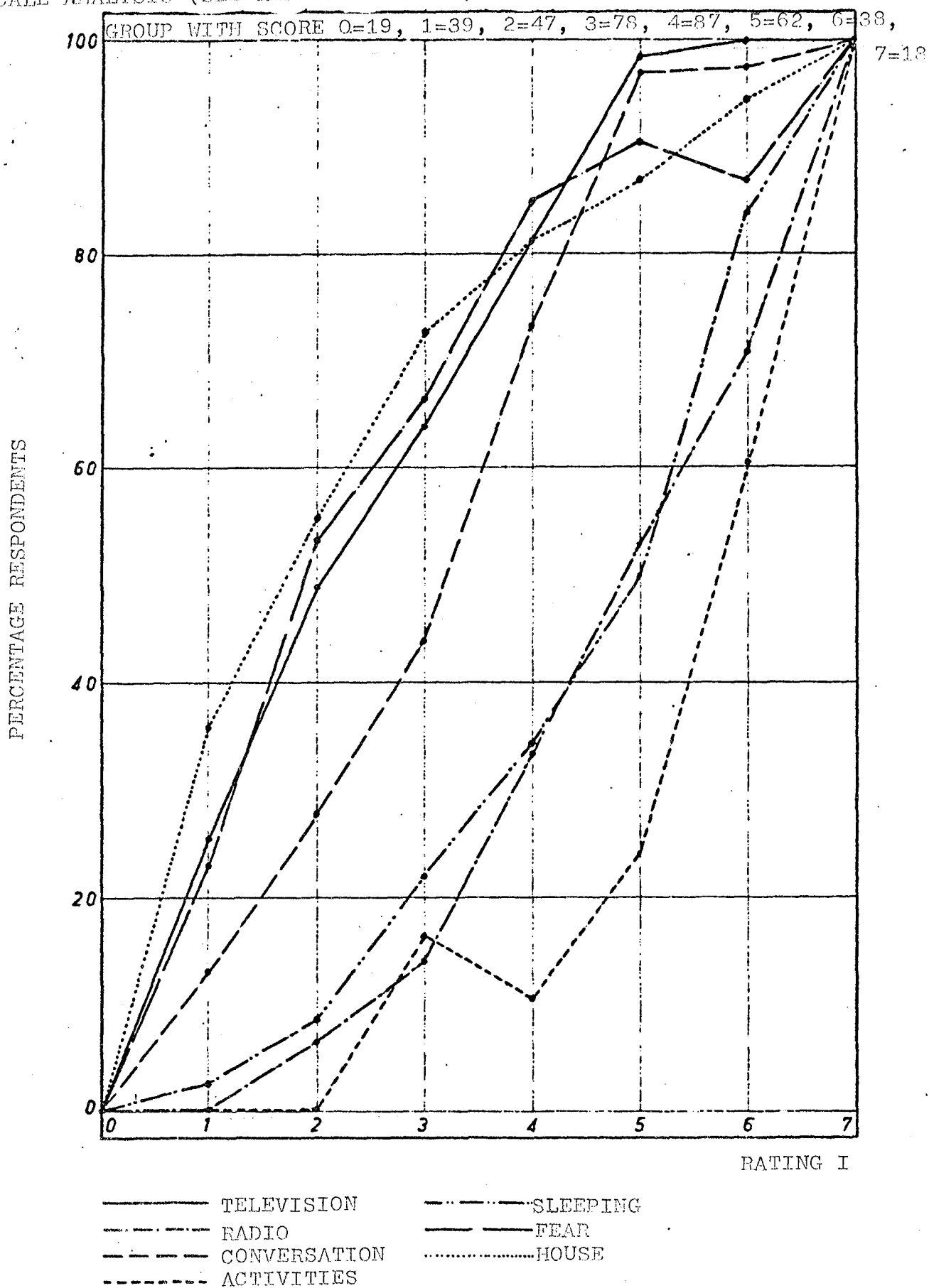


PERCENTAGE OF THE NUMBER OF RESPONDENTS WITH A CERTAIN ANNOYANCE
 RATING (ACCORDING TO RATING I) THAT EXPERIENCE A CERTAIN KIND OF AN-
 NOYANCE n = 150
 GROUP WITH RATING 0=3, 1=20, 2=23, 3=31, 4=49, 5=18, 6=5, 7=1

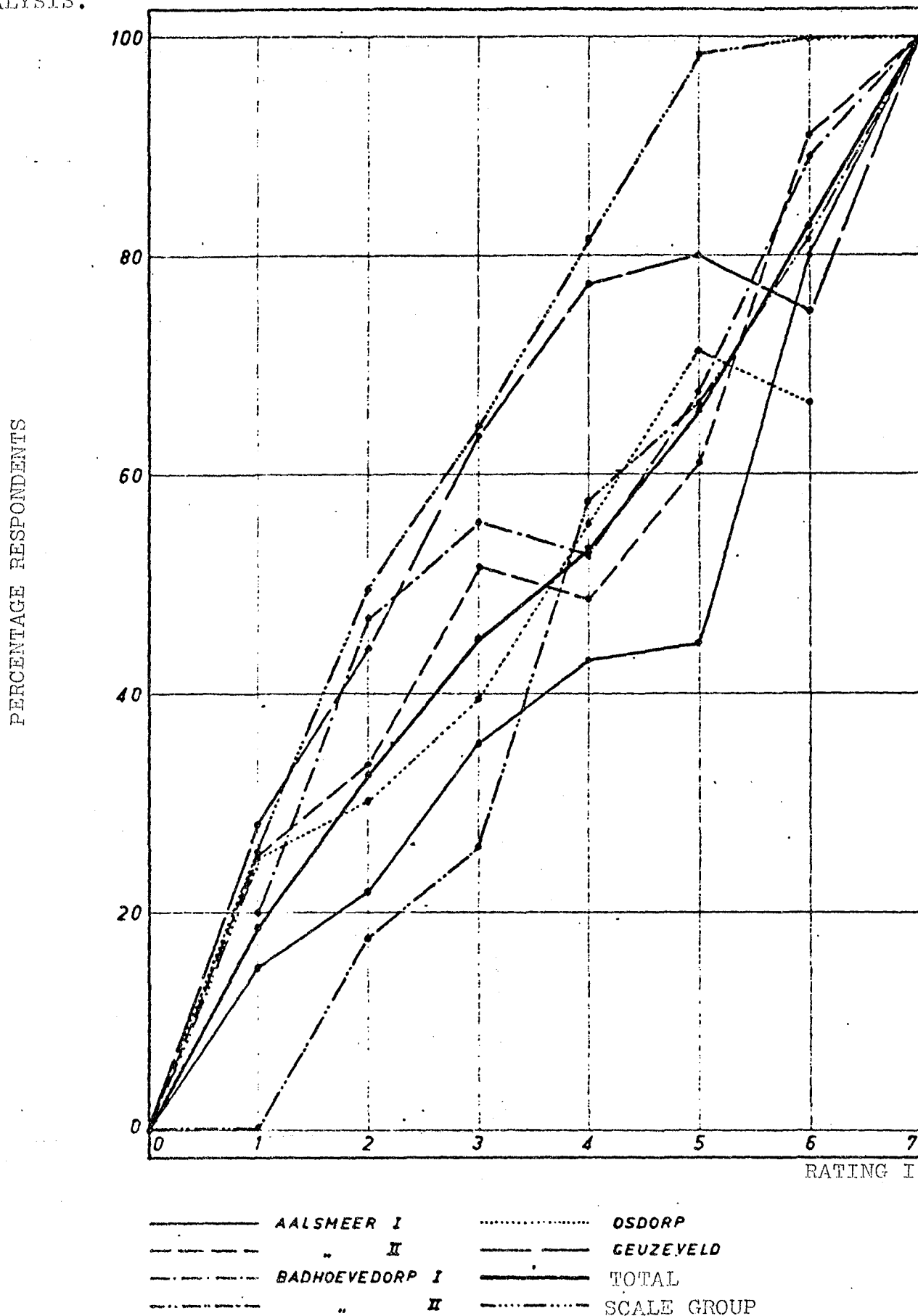


— TELEVISION	- - - SLEEPING
- . - RADIO	— FEAR
- - - CONVERSATION HOUSE
- - - ACTIVITIES	

ING (ACCORDING TO RATING I) THAT EXPERIENCE A CERTAIN KIND OF ANNOY-
 ANCE. ALL RESPONDENTS WITH A MAXIMUM ACTIVITY PATTEINAND USED FOR THE
 SCALE ANALYSIS (SEE REPORT PART III, P. 8) n=388



PERCENTAGE OF THE NUMBER OF RESPONDENTS WITH A CERTAIN ANNOYANCE RATING (ACCORDING TO RATING I) THAT IS DISTURBED WHILE WATCHING TV, IN THE DIFFERENT AREAS, COVERING THE COMPLETE MATERIAL, AND THE GROUP USED IN THE SCALE ANALYSIS.



SUBJECTIVE ANNOYANCE (LEFT PART OF CIRCLE)

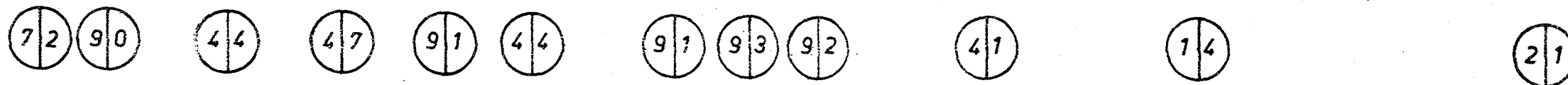
- 1= VERY ANNOYING, OFTEN EXPERIENCED
- 2= VERY ANNOYING, SOMETIMES EXPERIENCED
- 4= ANNOYING, OFTEN EXPERIENCED
- 7= ANNOYING, SOMETIMES EXPERIENCED
- 9= NOT ANNOYING, NOT QUALIFIED

ANNOYANCE RATING (RIGHT PART OF CIRCLE)

- 0= NO ANNOYANCE
- 7= HEAVY ANNOYANCE

DE HOEK

N



WEG

HOOFDDORP

SECUNDAIRE WEG

KRUISWEG

SLOTTER-

SCALE 1:2500

ROZENBURG

42 42 15 44 14 44 14 14 16 12 13 23 42 13 45 13 44 12 94 20 12 92

SECUNDAIRE WEG

KRUISWEG

DERWEG

AALSMEER

13

73

92

90

43

93

12

91

92

16

45

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SURVEY POPULATION RESPONSE TO AIRPLANE NOISE
REPORT PART 5

REPORT ON ADDITIONAL RESEARCH IN THE AREA DE HOEK - ROZENBURG

by

Drs. C. Bitter

K. W. Schwager

TABLE OF CONTENTS

	<u>Page</u>
1. INTENTION OF THE RESEARCH	1
2. DESCRIPTION OF THE RESEARCH AREA	2
3. DISTURBANCE IN ACTIVITIES FROM AIRPLANE NOISE	3
4. PERCEPTION OF AIRPLANE NOISE	4
5. CORRELATION BETWEEN THE DEGREE OF ANNOYANCE FROM AIRPLANE NOISE AND ANNOYANCE RATINGS	6
6. COMPARISON OF SOME RESULTS OF THIS ADDITIONAL RESEARCH WITH REACTIONS FROM THE POPULATION PREDICTED BASED ON THE LARGER RESEARCH	7

TABLES

FIGURES

MAPS

TABLE I

The importance the respondents attached to a quiet neighborhood and their opinion concerning the quiet in their own neighborhood (in %).

opinion concerning quiet in own neighborhood importance of quiet neighborhood	very good	good	just sufficient	insufficient	very insufficient	N =
very important	-	12	6	35	47	17
important	6	6	38	44	6	16
Total	3	9	21	40	27	33

TABLE II

Percentage of respondents that experience airplane noise as an unpleasant factor calculated as the number of respondents that are positive, negative or neutral in their attitude toward Schiphol.

categories	<u>a</u> number of respondents	% of total	<u>b</u> number of respondents that mention airplane noise	% b of a
positive	22	46%	15	68%
negative	2	4%	2	100%
neutral	24	50%	13	54%
Total	48	100%	30	62%

TABLE III

Frequency of disturbance by airplane noise while watching T.V., listening to the radio, during a conversation, while working strenuously and while sleeping or resting (in %).

frequency of disturbance activities		often dis- turbed	som- times dis- turbed	rarely dis- turbed	never dis- turbed	N =
Television	often watches	47	26	16	11	19
	sometimes watches	43	28.5	-	28.5	7
	often + sometimes	46	27	12	15	26
Radio	often listens	6	29	18	47	17
	sometimes listens	6	25	19	50	16
	often + sometimes	6	27	18	49	33
conversation		29	42	12	17	48
working strenuously		6	6	8	80	48
sleeping or resting		15	25	10	50	48

TABLE IV

Frequency of perception of breaking the sound barrier and the degree of annoyance (in %).

area	OFTEN			SOMETIMES			rare- ly	never	Total N =
	very annoy- ing	an- noy- ing	not annoy- ing	very annoy- ing	an- noy- ing	not annoy- ing			
De Hoek-Rozenburg	15	8	8	13	16	24	16	-	48

TABLE V

Correlation between most heard and most annoying form of airplane noise (in absolute figures).

most heard \ most annoying	take-off	landing	flying over	lasting test running	unde- ci- ded	Total
take-off	24	-	1	2	-	27
landing	-	1	-	-	-	1
flying over	2	1	11	2	-	16
lasting test running	-	-	-	-	-	0
undecided	1	-	-	-	3	4
Total	27	2	12	4	3	48

TABLE VI

Correlation between answers to question B11: "Which noise would you prefer to get rid of" and question G2 "Which noise is most annoying to you in your situation?"

B 11 \ G 2	airplane noises	traffic noises	noises from neighbors	other noises & undecided	Total
airplane noises	23	4	-	2	29
traffic noises	1	5	-	1	7
noises from neighbors	-	1	-	-	1
other noises & undecided	4	1	-	6	11
Total	28	11	-	9	48

TABLE VII

Correlation between the degree of annoyance from airplane noise and the annoyance ratings.

degree of annoyance annoyance rating	often very annoying	sometimes very annoying	often annoying	sometimes annoying	not annoying	Total (frequency of distribution of the annoyance ratings)
0	-	1	-	-	2	3
1	1	1	1	-	3	6
2	4	-	3	1	5	13
3	5	1	1	1	2	10
4	4	-	5	-	1	10
5	1	-	2	-	-	3
6	2	-	-	-	-	2
7	-	-	1	-	-	1
Total (absolute)	17	3	13	2	13	48
Total (in %)	35.3	6.4	27.1	4.1	27.1	100%

TABLE VIII

Obtained and predicted proportional frequency distribution of individual annoyance ratings.

ave- ind. annoyance rage annoy- ratings ance rating		0	1	2	3	4	5	6	7
De Hoek-Rozenburg (obtained)	2.83	6	13	27	21	21	6	4	2
(predicted)	3	5	13	20	26	20	10	4	2

TABLE IX

Percentage of examinees in the area De Hoek-Rozenburg who feel often and sometimes disturbed in cases of conversation, radio, T.V., activities, sleep; or are afraid, in which case the house is shaking.

Average annoyance rating ↓	conversa- tion dis- turbance		radio distur- bance		T.V. distur- bance		activities distur- bance		fear	house shakes	sleep distur- bance	
	O	S	O	S	O	S	O	S	yes	yes	O	S
2.83	29	42	6	27	46	27	6	6	31	67	15	25

TABLE 1A AVERAGE ANNOYANCE RATING FOR THE DIFFERENT AFFLUENT CLASSES

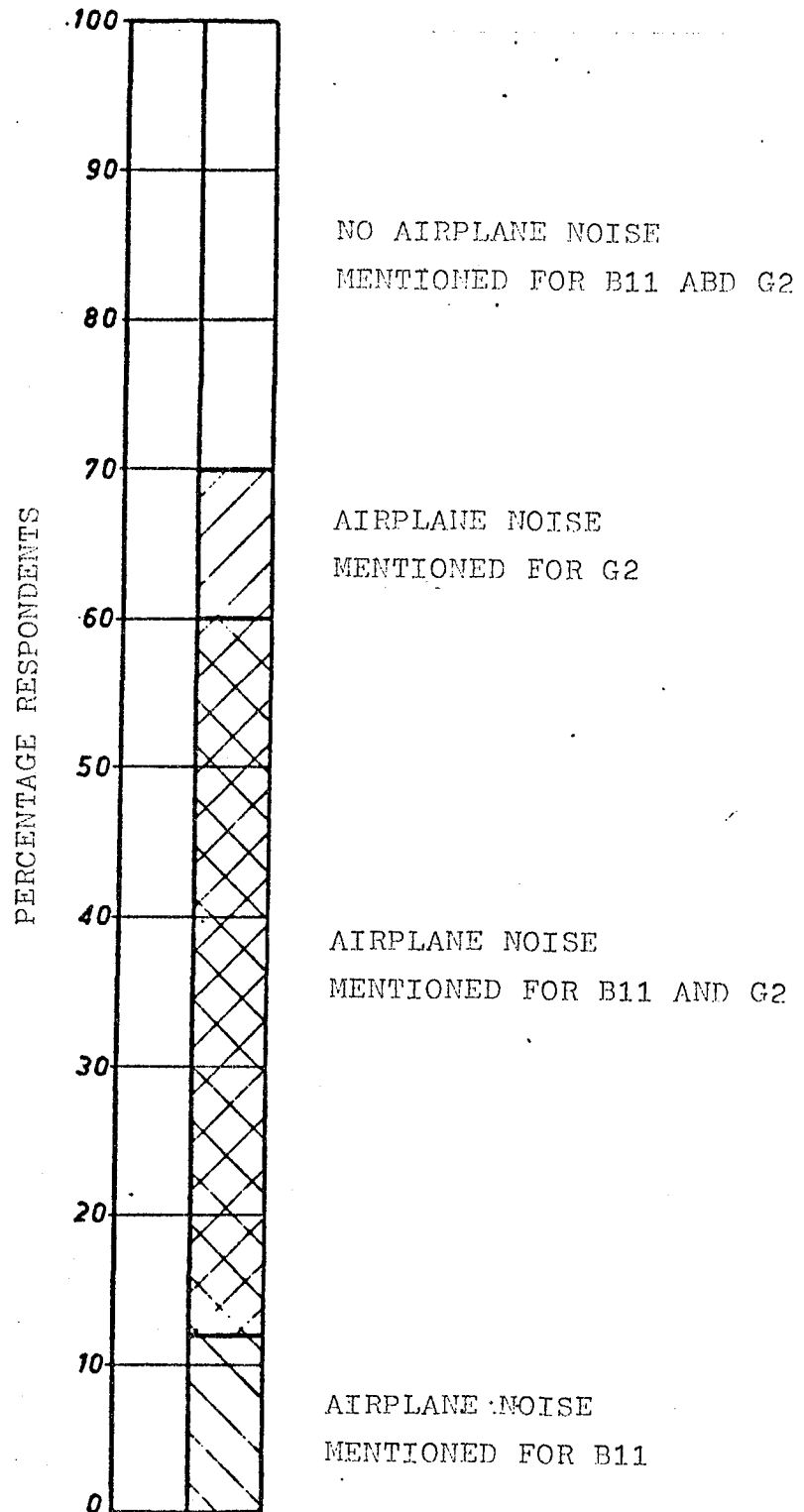
AREAS	CLASSES						Total
	poor lower classes	other lower classes	lower middle classes	well-to-do middle classes	upper classes	un-known	
avg. annoyance rating AALSMEER I N =	1,7 3	3.3 30	3,1 44	3,3 68	2.5 4	- 1	3,2 150
avg. annoyance rating AALSMEER II N =	3.2 6	3.4 85	3.4 39	3,1 14	2.4 5	- 1	3.4 150
avg. annoyance rating BADHOEVEDORP I N =	4,0 3	4.1 15	4.0 72	4.0 50	4.4 8	- -	4.1 148
avg. annoyance rating BADHOEVEDORP II N =	3,6 4	4.7 30	4.1 54	3,3 51	4.0 6	- -	4.0 145
avg. annoyance rating OSDORP N =	1.7 20	2.3 79	2,5 40	2.2 9	2,5 2	- -	2.3 150
avg. annoyance rating GEUZEVELD N =	2,8 5	2.5 48	2.5 70	2.5 24	1.0 2	- 1	2,5 150
avg. annoyance rating AMSTELVEEN I N =	1.5 2	2.4 16	2.0 13	2.3 11	1.4 7	- -	2,1 49
avg. annoyance rating AMSTELVEEN II N =	- 0	1.0 8	2.1 33	1.8 5	2,5 4	- -	1,9 50
avg. annoyance rating TOTAL N =	2,1 43	3.0 311	3,2 365	3,2 232	2,8 38	- 3	3,1 992

Subjective annoyance in the different classes for the complete material

(VA = very annoying; A = annoying; NA = not annoying) (in %)

SUBJECTIVE ANNOYANCE CLASSES	VA	A	NA	N =
POOR LOWER CLASSES	26	42	32	43
OTHER LOWER CLASSES	44	31	25	311
LOWER MIDDLE CLASSES	45	28	27	365
WELL-TO-DO MIDDLE CLASSES	43	35	22	232
UPPER CLASSES	39	32	29	38

AGREEMENT BETWEEN THE ANSWERS TO THE QUESTIONS
B11 and G2 FOR THE AREA DE HOEK - ROZENBURG,
CONCERNING AIRPLANE NOISE



and do not expect harm to the mental and physical health
of their family (in %)
(The areas are placed in the same sequence as in Figure I)

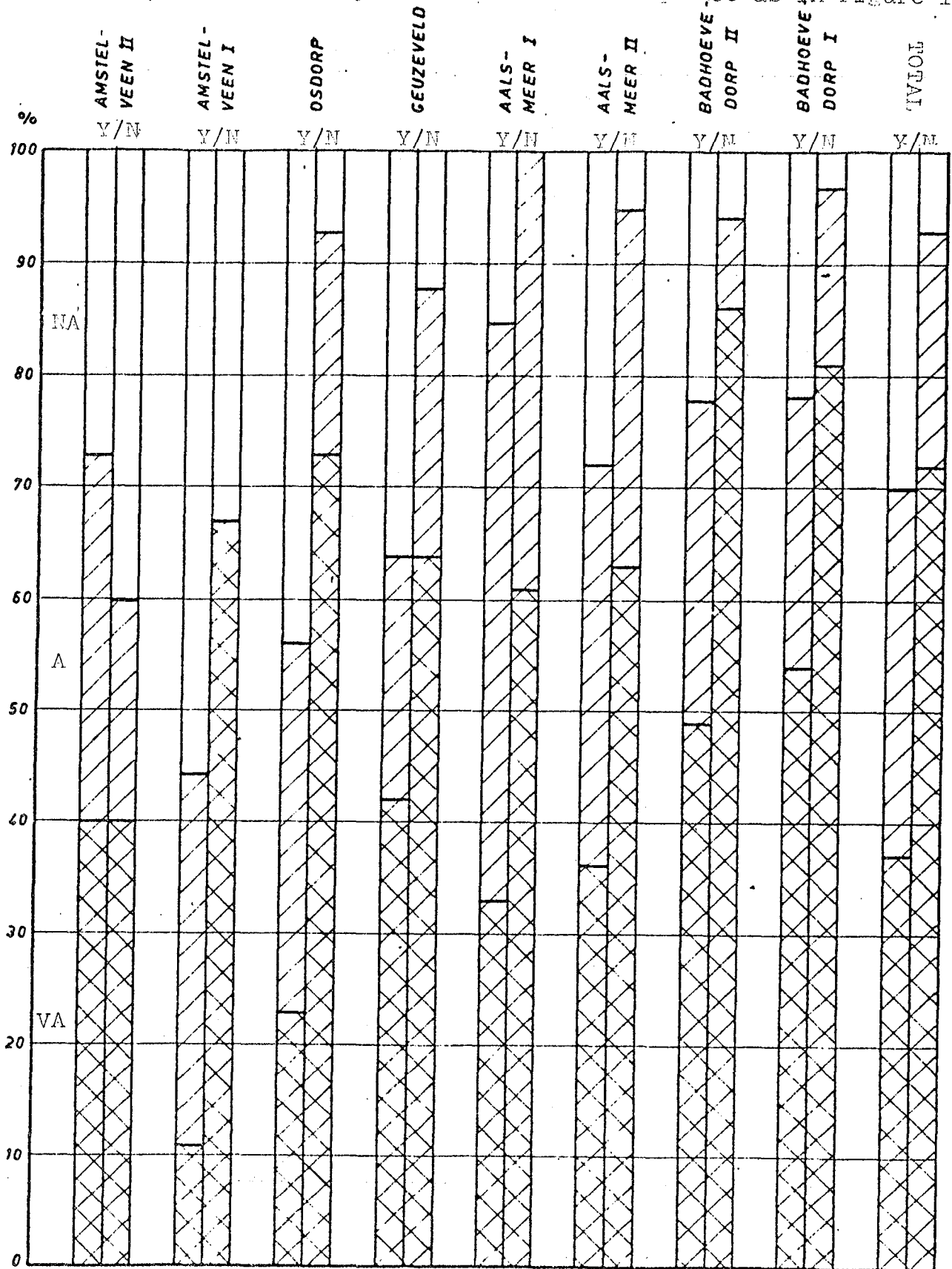
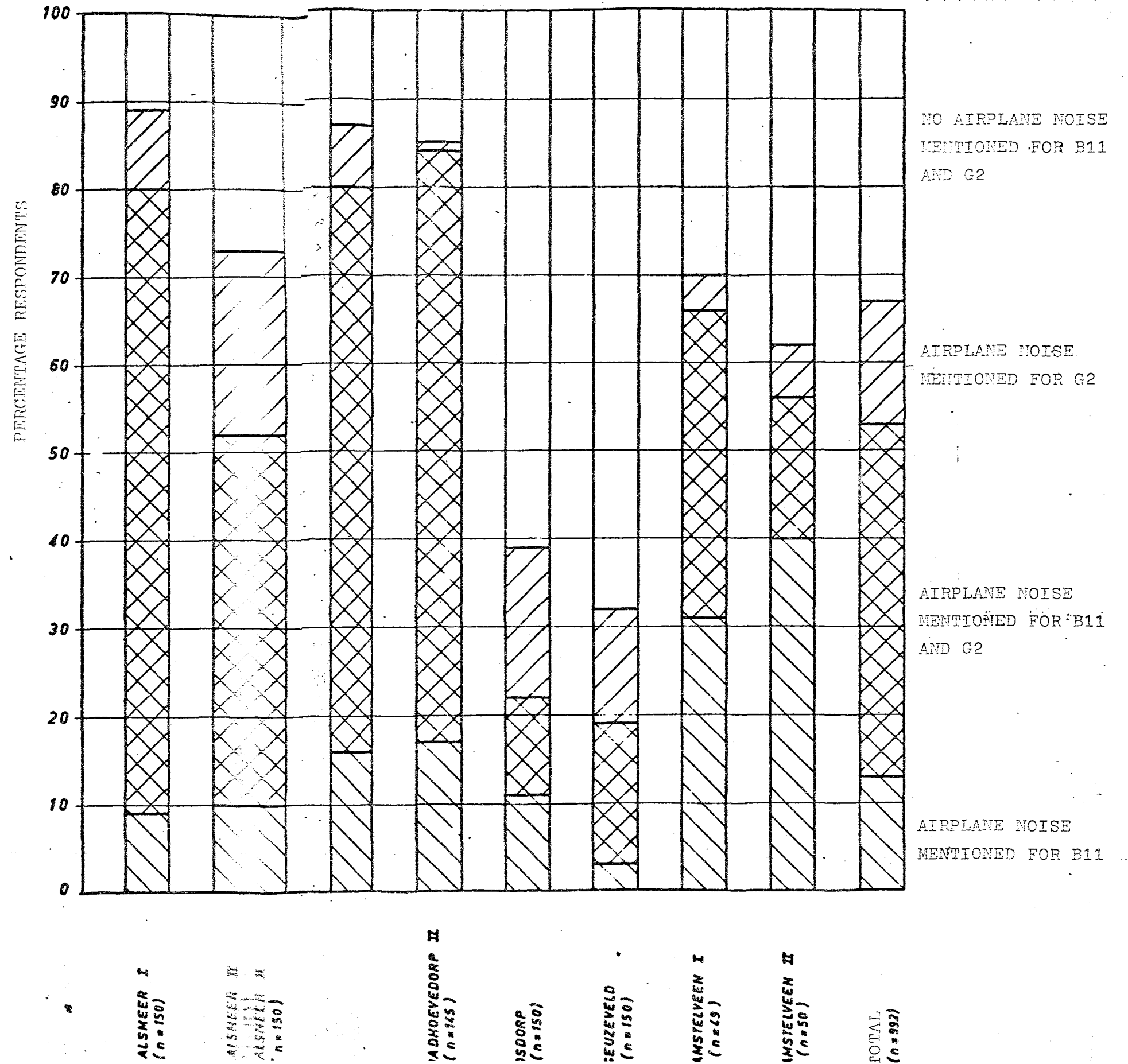


FIG. XIII AGREEMENT BETWEEN THE ANSWERS TO THE QUESTIONS:
 B11: "WHICH NOISE WOULD YOU PREFER TO GET RID OF?"
 G 2: "WHICH NOISE IS MOST ANNOYING TO YOU IN YOUR SITUATION?",
 FOR THE DIFFERENT AREAS AND FOR THE TOTAL, CONCERNING AIR-
 PLANE NOISE



SURVEY POPULATION RESPONSE TO AIRPLANE NOISE

REPORT PART 6

by

Drs. C. Bitter

K. W. Schwager

TABLE OF CONTENTS

	<u>Page</u>
1. "DO YOU EXPERIENCE PRESENTLY LESS ANNOYANCE FROM AIRPLANES THAN IN THE PAST OR MORE? WHY?"	1
2. "DO YOU EVER CLOSE WINDOWS AGAINST AIRPLANE NOISE?" "AT WHAT TIMES OF THE DAY AND HOW OFTEN?" "OF WHICH ROOMS?"	2
3. "DO YOU THINK THAT IN THE END THE NOISE WILL HARM THE MENTAL AND PHYSICAL HEALTH OF YOUR FAMILY?" "WHOSE AND IN WHAT WAYS?"	3
4. AFFLUENT CLASSES - ANNOYANCE FROM AIRPLANE NOISE	4
5. RENTAL PROPERTY - ANNOYANCE FROM AIRPLANE NOISE	5
6. COMPOSITION OF FAMILIES - ANNOYANCE FROM AIRPLANE NOISE	5

TABLES

FIGURES

Do you ever close windows against airplane noise?

When and in which rooms?

(() Badhoevedorp I)

WHICH ROOMS? WINDOWS CLOSED; WHEN?	ROOMS TOWARD SCHIPHOL	BEDROOMS	KITCHENS	OTHER ROOMS	LIVING ROOM	ALL THE ROOMS	TOTAL
YES, UNSPECIFIED	-	5	-	1	5 (1)	-	11 (1)
YES, WHILE SLEEPING AND RESTING	2	22 (8)	-	1	1	2	28 (8)
YES, DURING TELE- PHONE CONVER- SATIONS	-	-	-	-	6	1	7
YES, WHEN THE WIND IS UNFAVORA- BLE	-	2	-	-	1	1	4
YES, AIR TRAFFIC RUSH HOUR	2 (1)	1 (1)	-	-	-	-	3
YES, OTHER REASONS	3	5 (4)	3 (1)	7	14 (6)	1 (1)	33 (12)
Total	7 (1)	35 (13)	3 (1)	9	27 (7)	5 (1)	86 (23)

Correlation between disturbance while sleeping or resting and harm to physical or mental health (Dutch research)

<div> DISTURBANCE WHILE RESTING OR SLEEP- ING; YES OR NO </div> <div> HARM TO PHYSICAL OR MENTAL HEALTH; YES OR NO </div>	YES	NO	UNDECIDED UNANSWERED	TOTAL
YES	109	55	0	164
NO	348	471	1	820
UNDECIDED UNANSWERED	5	3	0	8
TOTAL	462	529	1	992

$$r_t = .29$$

$$\sigma r_t = .059$$

[r_t = tetrachorical correlation; see pages 305-311 in: J. P. Guilford, Fundamental Statistics in Psychology and Education, McGraw Hill, New York 1956.

r_t = standard deviation of r_t

Because r_t .29, is greater than 2.6 times the standard deviation, .059, we may assume that there is a clear correlation between the two qualities represented by the two questions. At McKennell this correlation is greater than in our research; also see Table VI.

TABLE VII Average annoyance ratings (objective annoyance) for the groups of respondents who do and do not cause harm to the mental or physical health of their family
(() number of respondents)

AREAS	Average Annoyance Ratings		P_D (= deviation)
	harm	no harm	
AALSMEER I	4.30 (23)	3.00	$P_D < .001$
AALSMEER II	4.42 (19)	3.17	$.001 < P_D < .01$
BADHOEVEDORP I	4.68 (38)	3.88	$.001 < P_D < .01$
BADHOEVEDORP II	4.84 (36)	3.63	$P_D < .001$
OSDORP	3.27 (15)	2.16	$.001 < P_D < .01$
GEUZEVELD	3.52 (25)	2.34	$.001 < P_D < .01$
AMSTELVEEN I	4.00 (3)	1.98	$.01 < P_D < .05$
AMSTELVEEN II	3.00 (5)	1.78	$.05 < P_D < .10$
TOTAL	4.26 (164)	2.87	$P_D < .001$

TABLE VIII Subjective annoyance for the groups of respondents who do and do not expect harm to the mental or physical health of their family (in %)

AREAS	harm or no harm	VA	A	NA	T %
AALSMEER I N = 23	yes	61	39	0	100
	no	33	52	15	100
AALSMEER II N = 19	yes	63	32	5	100
	no	36	36	28	100
BADHOEVEDORP I N = 38	yes	81	16	3	100
	no	54	24	22	100
BADHOEVEDORP II N = 36	yes	86	8	6	100
	no	49	29	22	100
OSDORP N = 15	yes	73	20	7	100
	no	23	33	44	100
GEUZEVELD N = 25	yes	64	24	12	100
	no	42	22	36	100
AMSTELVEEN I N = 3	yes	67	0	33	100
	no	11	33	56	100
AMSTELVEEN II N = 5	yes	40	20	40	100
	no	40	33	27	100
TOTAL N = 164	yes	72	21	7	100
	no	37	33	30	100

for respondents in rental property or
owned property in the different areas
(in %) VA=very annoying; A=annoying; NA=not an.

area \ category	in percentages			N
	VA	A	NA	
AALSMEER I r	35	56	9	43
o	43	45	12	95
AALSMEER II r	36	39	25	97
o	48	27	25	48
BADHOEVE-DORP I r	64	19	17	113
o	55	30	15	33
BADHOEVE-DORP II r	56	25	19	116
o	64	22	14	28
OSDORP r	28	31	41	149
o	-	-	-	-
GEUZEVELD r	44	25	31	149
o	-	-	-	-
AMSTELVEEN I r	6	49	45	33
o	31	19	50	16
AMSTELVEEN II r	41	28	31	29
o	35	40	25	20
TOTAL (-OSDORP AND GEUZEVELD) r	46	32	22	431
o	47	34	19	240
AALSMEER I AND II r	50	31	19	369
BADHOEVE-DORP I AND II o	49	35	16	204

the respondents in rental property and in owned property, in the different areas

area	category	Average annoyance rating			
		rental property	owned property	unanswered	Total
AALSMEER I		3.16	3.36	-	3.21
N =		43	95	12	150
AALSMEER II		3.30	3.42	-	3.34
N =		97	48	5	150
BADHOEVEDORP I		4.05	4.24	-	4.09
N =		113	33	2	148
BADHOEVEDORP II		3.90	4.00	-	3.92
N =		116	28	1	145
OSDORP		2.27	-	-	2.27
N =		149	-	1	150
GEUZEVELD		2.53	-	-	2.53
N =		149	-	1	150
AMSTELVEEN I		2.09	2.19	-	2.12
N =		33	16	-	49
AMSTELVEEN II		2.07	1.70	-	1.90
N =		29	20	1	50
TOTAL (-OSDORP AND GEUZEVELD)		3.49	3.35	-	3.43
N =		431	240	21	692
AALSMEER I AND II + BADHOEVEDORP I AND II		3.70	3.60	-	3.67
N =		369	204	20	593

TABLE XIII

Objective and subjective experienced annoyance from airplane noise by married couples with and without children in the different areas and for the complete material									
area	category	objective annoyance (avg. an. ratings)		subjective annoyance (in %)					
				couples w/o children			couples w/ children		
		couples w/o chldn	couples w/ chldn	VA	A	NA	VA	A	NA
AALSMEEER I		2.65	3.41						
N =		29	112						
AALSMEEER II		3.77	3.40						
N =		18	110						
BADHOEVE-DORP I		4.10	4.17						
N =		29	109						
BADHOEVE-DORP II		3.89	3.85						
N =		37	89						
OSDORP		2.08	2.41						
N =		26	110						
GEUZEVELD		2.88	2.59						
N =		25	110						
AMSTELVEEN I		1.71	2.60						
N =		17	27						
AMSTELVEEN II		1.60	1.94						
N =		10	35						
TOTAL		3.03	3.19						
N =		191	702						

- A 1 How do you like living in this area?
- 2 What would you say: do you think it is very pleasant to live here, pleasant, O.K., unpleasant, or very unpleasant?
very pleasant = 1, pleasant = 2, O.K. = 3, unpleasant = 4, very unpleasant = 5
- 3 What are the pleasant things about living here?
- 4 What are the unpleasant things about living here?
- 5 What is your opinion about your house?
- 6 About your house, are you very satisfied, satisfied, it's O.K., dissatisfied, or very dissatisfied?
- 7 Is this the first single house you have lived in with your family, or isn't this the case?
- 8 Why did you move?
- 9 What kind of house was your previous one?
- 10 When did you move here?
- 11 What are the main differences between your present and your previous neighborhood?
- 12 Were you able to get another house in those days?
- 13 Why did you choose this house? What other possibilities did you have?
- 14 a Do you ever consider leaving this area?
b Why not? Why?
- B 1 If you could get an equally good house in different cities, which area would you prefer?
- 2 What are your minimum demands for an area?
- 3 Survey: Submit card 1; fill in schematic in column I under question 5. Here is a card with different possibilities. Can you tell me, do you think these items are very important (VI), important (I), unimportant (U) or very unimportant (VU) for you and your family?
- 4 Are there any other items that haven't been mentioned that you think are important? If so, what are they and how important are they?
- 5 What do you think about the item you previously thought important in your neighborhood, very good (VG), good (G), just sufficient (JS), insufficient (I) or very insufficient (VI)?

- 6 If you could change one thing in your neighborhood, which item would you choose?
 - 7 You thought of _____ as a quiet neighborhood. Can you tell me why?
 - 8
 - a Concerning noise from the neighbors, is it very quiet, quiet, O.K., noisy or very noisy?
 - b What sort of noises do you hear from the neighbors?
 - c Do you think these noises are very annoying (VA), annoying (A) or not annoying (NA)?
 - d Do you hear these noises often (O), sometimes (S), rarely (R)?
 - 9
 - a Concerning noises from outside, is it very quiet, quiet, O.K., noisy or very noisy?
 - b What sort of noises do you hear from outside?
 - c Do you think those noises are very annoying (VA), annoying (A), or not annoying (NA)?
 - d Do you hear these noises often (O), sometimes (S) or rarely (R)?
 - 10
 - a Do you hear any other noises?
 - b Do you think those noises are very annoying (VA), annoying (A) or not annoying (NA)?
 - c Do you hear these noises often (O), sometimes (S), rarely (R)?
 - 11 Which noise would you prefer to get rid of? Why?
 - 12
 - a Do you also hear airplanes?
 - b What sort of noise do you hear from airplanes?
 - c Do you think those noises are very annoying (VA), annoying (A) or not annoying (NA)?
 - d Do you hear these noises often (O), sometimes (S), rarely (R)?
- C 1 These days people talk about noise annoyance in connection with modern house building. Everybody who lives in a modern house or apartment knew in advance what he could expect. But if you live in the vicinity of Amsterdam, then there is an airport with, as with everything, pleasant sides but also unpleasant sides. I want to talk to you about Schiphol.
- First of all, can you tell me why you like the presence of Schiphol and the airplanes?
- 2 Can you also tell me why you dislike it?

- 3 a During what kind of activities are you disturbed by airplanes?
b When are you disturbed most?
- 4 a Who in your family experience(s) the greatest annoyance?
b Why?
- 5 a How often do you watch T.V.?
often = 1, sometimes = 2, rarely = 3, never = 4
b How often during this are you disturbed by airplanes?
- 6 a How often do you listen to the radio?
b How often during this are you disturbed by airplanes?
- 7 Are you ever disturbed by airplanes during a conversation?
- 8 Are you ever disturbed by airplanes during a telephone conversation?
- 9 a Are you ever disturbed by airplanes while working strenuously?
b During what kind of activity?
- 10 a Are you ever disturbed by airplanes while resting or sleeping?
b Is this in the daytime, in the evening or at night?
- 11 a Do you ever hear airplanes break the sound barrier?
b Is this very annoying, annoying, not annoying?
- 12 a Do you ever get scared or are frightened when you hear airplanes?
b Do you get scared because of the reason stated or are there any other reasons according to you?
I'm afraid one will crash - 1, I'm reminded of the war - 2, the noise is too sudden - 3, the noise is too near and too loud - 4, the children get scared - 5, other - 6
- 13 a Do you currently experience less annoyance from airplanes than before or more?
more annoyance less annoyance undecided
b Why?
- 14 a Do young children in the neighborhood feel annoyance from airplanes or sound barrier bangs?
b Can you say some more about that?
- 15 Do your guests feel more annoyance than your family?
- 16 a Do you know if other people in the neighborhood are afraid of or get scared by airplane noise?
b How do you know this? Can you say some more about this?
- 17 a Do you ever close windows against airplane noise?
yes - 1 no - 0

- b At what time of the day and how often?
c Of which rooms?
- 18 a Does your house ever shake from airplane noise?
no - 0 yes - 1
b Do you like this?
c Don't you like it because you feel unsafe, the house suffers from it, both, or are there other reasons?
unsafe feeling - 1 house suffers - 2 both - 3
other:
- 19 a Do you think that this noise will eventually harm the mental and physical health of your family?
no - 0 yes - 1
b Whose and in what way?
- 20 a Do you mean that airplane noise will cause you material damage?
yes - 1 no - 0
b In what way?
- 21 a Have you ever tried to do something about this?
b In what way and to what extent?
- D 1 What would you say: do you socialize most with people here in _____ (area)?
no - 0 yes - 1
- 2 Do you talk frequently, sometimes, rarely or never with people in the neighborhood?
- 3 a Do you talk frequently, sometimes, rarely or never with people about airplane noise?
b Where do you talk about it?
- 4 a Do you know the opinion of the people in this neighborhood concerning airplane noise?
b Can you say some more about that?
- 5 What kind or groups of people suffer most from airplane noise?
- E 1 We would like to know how the airplanes fly over; are they flying straight over or do they pass you?
2 Do they fly over very often, often or seldom?
3 What do you think this depends on?
4 Do they fly very low, low or fairly high?

- 5 How do you like it if they fly over fairly low?
- 6 a Were you at home yesterday?
- b How many airplanes flew over yesterday?
- 7 a Were you at home the day before yesterday?
- b How many airplanes flew over the day before yesterday?
- 8 According to you, what sort of airplanes make the most noise?
- 9 Do you hear here most: take-off, landing, flying over, lengthy test running?

- F 1 a Do you think that the people who control the air traffic are aware of the people here?
- b Can you say some more about that?
- 2 a Do you think that the pilots are aware of the people here when they fly over?
- b Can you say more about that?
- 3 a Do you think that people here are taken into account at the place and time of lengthy test running?
- b Can you say some more about that?
- 4 a Do you think that people in the area like you are taken into account upon expansion of the airport?
- b Can you say some more about that?

- G 1 Do you ever go to Schiphol with guests, etc.?
- 2 Last of all, what is most annoying to you in your situation, airplane noise, traffic noise or noise from neighbors?

- H 1 a What is the composition of your family; how old are the members; what is their profession and education; when were they born?
- 2 a Are there family members who have to work or study for work or a profession at night?
- b Who?
- 3 What type of education does the head of the family have?
- 4 In what sort of business does he work?
- 5 What is his title?
- 6 a Do you live in rental property or owned property?
- b In what year was it built?

- 7 Thank you for your cooperation. Maybe you have some more relevant details that might be of importance to us?
- 8 Fill out without interview
- single house - 1 one of two houses under one roof - 2
- house in a row: middle - 3 house in a row: corner - 4
- house downstairs in a row - 5 house upstairs in a row, duplex-6
- apartment with common entrance - 7
- What storey?
- Total number of stories?
- apartment with a gallery - 9
- What storey?
- 9 a Name
- b Address City
- c Name of interviewer No. Date Interview Time Conversation No.
- 10 a How often during the interview did airplanes fly over?
- b How often did you have to interrupt the interview for that?
- c How often due to other noise?
- 11 a Was the radio or T.V. turned on when you came in?
- b If so, were they turned off or only turned down?
- 12 poor lower classes - 1 other lower classes - 2
- lower middle classes - 3 well-to-do middle classes - 4
- upper classes - 5
- 13 Give a short description of the condition of the house and the neighborhood.
- 14 a Did the interview go pleasantly?
- b How was the cooperation of the interviewee?
- c Was somebody else also present?
- If so, who and did this person influence the conversation?